

STATE OF NEW YORK—DEPARTMENT OF AGRICULTURE

CALVIN J. HUSON, COMMISSIONER

BUREAU OF FARMERS' INSTITUTES

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The following questions will be discussed at your institute. Study them, bring them with you and call for the ones you are interested in.

ORCHARD MANAGEMENT

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Location

1. What subjects should receive careful study in determining location of orchards?
2. In the selection of location what is the first question to settle?
3. What natural factors of a location may hinder or help?

Soil

4. Will a chemical analysis of soil determine its value for any of the tree-fruits?
5. What kind of soil is best for the different tree-fruits?
6. Is it possible to select the particular soil best suited to a given variety?
7. What soil characteristics largely determine its value for orchards?

Selection of Varieties

8. How may we determine what varieties to set?
9. How are new varieties originated?
10. What important factors must be considered in the selection of a variety?
11. Should we select varieties with reference to cross-pollination of blossoms?
12. Name the best commercial varieties of the different tree-fruits?
13. What are some of the promising new varieties and should we plant largely of such kinds?
14. Do varieties of fruit "run out"?

Selection of trees

15. What are "pedigreed" trees or "improved strains" and what is their value?
16. Are nursery trees grown in the immediate locality any better than those grown farther away or are northern grown trees any better than southern grown trees?
17. How may we be sure that trees are true to name?
18. What size of tree is most desirable to purchase?
19. Should we select one, two, or three-year-old trees?
20. Give a description of an ideal nursery tree?
21. Should we select high or low-headed trees, and what is the best height?

Propagation

22. What is the common method of propagating tree-fruits?
23. Is it a good plan to set trees and top-work them to the desired varieties?
24. Is it advisable for the fruit-grower to propagate his own trees?
25. On what stocks are the different tree-fruits generally worked?
26. Of what value are trees on Dwarf stock?
27. Is it advisable whenever possible to purchase trees propagated from bearing trees or from improved strains?

Planting

28. What system of laying out the orchard is to be preferred?
29. Should "fillers" be used and, if so, what kinds?
30. At what distance should trees be set?
31. Which is preferable, to set trees in the fall or spring?
32. Is it advisable to set the entire orchard to one variety or should several kinds be used?
33. How deep should trees be set?
34. Should dynamite be used in digging holes?

Pruning

35. What pruning may be necessary at transplanting time?
36. Should the trees be pruned heavily or lightly for several years after setting?
37. What form of head is most desirable?
38. What is the effect of cutting back the branches for several years?
39. Is it advisable to try to rebuild or rehead old trees by the so-called "dehorning method"?
40. How much should young trees be pruned?
41. What are the principal reasons for pruning?
42. When should trees be pruned?
43. Where should the cut be made in removing branches?
44. Should cut surfaces be protected and if so with what material?
45. Is it advisable to fill cavities with cement?
46. How should neglected orchards be pruned?
47. Will girdling the trunks or limbs of trees bring them into bearing?
48. Why cannot trees be pruned according to rule?
49. Is summer pruning to be recommended?

Cultivation

50. Is sod treatment to be recommended for any of the tree-fruits?
51. Should orchards be plowed every year?
52. Which is better, fall or spring plowing of orchards?
53. Should orchards be plowed deeply?
54. What are some of the most important benefits secured by thorough cultivation of orchards?
55. What is the "Hitchings" method of sod treatment, and can it be generally recommended?
56. What is the best tool to use in working about low-headed fruit trees?
57. How early should cultivation begin and how late should it be continued?
58. Will injury result if orchards are plowed in midsummer?

Irrigation

59. Will it pay to irrigate tree-fruits in this State, and, if so, how may it best be done?

Cover Crops

60. What is a "cover crop" and of what use is it?
61. What are the best cover crops to use; when sown; how much seed per acre?
62. Should cover crops be grown, when, and what kinds?

Feeding the Trees

63. What fertilizers are best for the different tree-fruits — in what amounts — when and how applied?
64. Will a chemical analysis of soil indicate what fertilizer should be used?
65. Which is to be preferred in the orchard — stable manure or commercial fertilizers?
66. There is not enough stable manure for the general farm crops and for the orchard; where should it be used?
67. How may a fruit-grower determine what fertilizers to use?
68. Is there any danger through the excessive use of stable manure or commercial fertilizers?
69. What are the three chief elements of fertility in commercial fertilizers? Do all soils require additions of the three kinds and in equal amounts?
70. If trees do not appear healthy, is their fertilization the most important factor to be considered first?
71. How can the fertility of the soil be maintained where no stock is kept?
72. Should manure or fertilizer be mixed with the soil when the trees are set?
73. Has salt any value as a fertilizer for fruit trees?

Insects, Diseases and Spraying

74. What are some of the most important insects attacking orchards?
75. What are the most serious diseases?
76. What are the four essential steps to follow when a person suspects an attack of insects or disease?
77. What materials are used most commonly against insects; against diseases? Are any of the new preparations more economical than the old?
78. Why is it so important that the foliage be kept in a healthy condition?
79. Is there danger of poisoning stock if sprayed orchards are used as pasture?
80. Why do systems of spraying succeed in some orchards but fail in others? What are the things essential to satisfactory spraying?
81. Is home-made lime-sulphur preferable to the commercial article? Is the lime and sulphur best for dormant spraying?
82. Is it possible to grow varieties of fruit immune to attacks of insects or diseases?
83. Are dust sprays as equally effective in this State as liquid sprays?
84. Does it pay to spray young fruit trees annually — before they come into bearing?

Duration of Plantations

85. For how long a time may profitable crops be secured from the different tree-fruits?
86. What treatment may be expected to extend the profitable life of an orchard?
87. Will it pay to attempt to rejuvenate old and neglected orchards, and, if so, how should it be done?
88. What are the principal causes of orchards dying out?

Hardiness

89. What are the principal causes of winter injury?
90. Are trees as hardy when cultivated as long as growth continues as when cultivation ceases early in August?
91. Give a list of the hardest varieties.
92. How may injury occur during summer?
93. Is it possible to retard the opening of the buds in spring?
94. Are orchard heaters to be recommended for any tree-fruits in this State?

Harvesting and Marketing

95. At what time is fruit in the best condition to be picked?
96. Should fruit be put in piles under the trees or is it better to put in storage as soon as possible?
97. What are the most important points to observe in harvesting fruit?
98. Should apples be packed in barrels or in boxes?
99. Is it better as a rule to hold fruit for a higher price or to sell at time of harvest?
100. What is "scald" and how may it be prevented?

Yields and Profits

101. How soon do the different tree-fruits come into bearing?
102. What average yield may be expected from mature trees?
103. Why is it so difficult to determine average profits?

Miscellaneous

104. Should windbreaks be planted to protect orchards?
105. Are there many desirable varieties suitable for the home or family orchard?
106. How may waste products of the orchard be utilized?
107. How may we improve color of fruit?
108. Give rule for preservation of fruit for exhibition purposes.
109. What causes fruit to drop prematurely in June or to remain on the tree dwarfed in size?
110. What work has been carried on at the Geneva Experiment Station in breeding new varieties of tree-fruits?

111. How should fruit trees be protected against mice and rabbits?
112. Does it pay to bridge-graft young fruit trees girdled by mice?
113. What varieties of apples are suitable as fillers?
114. Is it advisable to top-work mature trees to better varieties?
115. In draining orchard land how deep should the tiles be laid?
116. What is the best way to dispose of non-marketable fruit?
117. Will it pay to thin all varieties of tree-fruits? What varieties need thinning? What varieties never need thinning?
118. Is there any advantage by spraying when in bloom?
119. Should a grower have nothing but one kind of fruit or is it better to have several kinds of fruits, as well as varieties?
120. Should fruit-growers keep swarms of bees to help fertilize the bloom?
121. Is it advisable to plant apples after apples, pears after pears, etc.?
122. What is meant by "air drainage"?
123. Of what benefit is lime to fruit orchards?
124. Is it a good plan to scrape the rough bark from the trunks of fruit trees?
125. Is there a tendency to over-plant tree-fruits in this State?
126. Is the best land on ordinary farms too valuable to give up to orchards?
127. To what extent should power sprayers be used?
128. What can be done to promote annual bearing?
129. Name some of the things we can do to improve the price of orchard products.